

ABSTRACT

A device (1) for the carrying out of investigations on cell cultures (2) which take place in a liquid culture medium (4). The device possesses at least a receptacle (3) to contain the culture medium (4) including the cell culture (2), wherein one or more sensors (6) for measurement of the cell culture activities is provided and wherein the receptacle (3) has at least an opening for the adding and the removal of liquid culture medium (4) and the like. A separating element (7) can be introduced into the open upper part of the receptacle (3) and can be brought within the said receptacle (3) in a position close to the bottom (5), in which the said separating element (7) makes a boundary forming a partial space (8) which has a small volume in relation to the entire volume of the receptacle (3). Further, a flow channel (9) is provided, which first, communicates with the small volume partial space (8), and second, communicates with the said reservoir (14). This flow channel (9) and/or the sensors (6) are placed in the area of the small volume partial space (8). By means of the capability for adjustment of the separating element (7) as to its distance from the bottom of the receptacle (3), in the neighborhood of the cell culture (2) a microreaction volume exactly fitting the current requirements can be adjusted. By means of the flow channel (9), the cell culture (2) in the small volume partial space (8) stands in fluid communication with that in the reservoir. For the regeneration of the cell culture solution in the small volume partial space, the separating element (7) can be elevated and depressed, or it is possible, to inject into the small volume partial space of the receptacle (3) a quantity of liquid and by means of a through-flow channel. In this case, a convective mixing of fresh and spent medium takes place through the flow channel (9) between the small volume partial space and the reservoir (14).